

Remarks / Arguments

Claims 1 to 24 and 34 to 37 are pending in the present patent application. Claim 34 has been amended. Support for the amendment to claim 34 is found in Applicants' specification such as, for example, at page 9, lines 1 to 10.

The Action includes rejections under 35 U.S.C. §§ 102(b) and 102(e). In view of the remarks that follow, reconsideration and withdrawal of the rejections are requested respectfully.

Discussion of the Rejections Under 35 U.S.C. § 102(b)

Claims 34 to 36 have been rejected under §102(b) as allegedly being anticipated by U. S. Pat. No. 6,310,019 to Kakizawa et al. ("the 019 patent"). Applicants respectfully traverse this rejection because the 019 patent does not disclose each and every element of the claimed invention. *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ.2d 1051, 1053 (Fed. Cir. 1987) ("A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.").

Applicants' claimed invention defines a method for treating a post-CMP processed substrate comprising the steps of (1) providing the post-CMP processed substrate comprising a semiconductor material; and (2) contacting the post-CMP processed substrate with a process solution ***consisting essentially of*** an aqueous solvent and a non-aqueous solvent and about 10 ppm to about 500,000 ppm of at least one surfactant having the specified formulas (I) and (II) (*see, e.g.*, claim 34). Significantly, the process solution of Applicants' claimed invention consists of ***three*** components – an aqueous solvent (*i.e.*, water), a non-aqueous solvent, and a surfactant component selected from formulas (I) and (II) (other than the possibility of other additives such as, for example, stabilizers, colorants,

wetting agents, antifoamers, etc., which do not materially affect the basic and novel characteristics of the invention).

The 019 patent, in contrast, is directed to a process for cleaning a post-CMP processed substrate with an alkaline-containing cleaning agent. Significantly, the 019 patent teaches that the cleaning compositions disclosed therein include a quaternary ammonium compound (*see, e.g.*, the 019 patent at col. 2, line 63 to col. 3, line 8; col. 7, line 27 to col. 11, line 30; and claim 1). Since the compositions of the 019 patent disclose a include a quaternary ammonium compound, the 019 patent does not teach or suggest Applicants' claimed invention, *i.e.*, a process solution that consists of **three** components – an aqueous solvent (*i.e.*, water), a non-aqueous solvent, and a surfactant component selected from formulas (I) and (II) (other than the possibility of other additives such as, for example, stabilizers, colorants, wetting agents, antifoamers, etc., which do not materially affect the basic and novel characteristics of the invention). Thus, for at least these reasons, the 019 patent does not teach each and every element of Applicants' claimed invention.

Claims 34 to 36 have also been rejected under §102(b) as allegedly being anticipated by U. S. published patent application No. 2004/0149309 to Hsu et al. ("the Hsu publication"). Applicants respectfully traverse this rejection because the Hsu publication does not disclose each and every element of the claimed invention. *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ.2d 1051, 1053 (Fed. Cir. 1987) ("A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.").

Applicants' claimed invention defines a method for treating a post-CMP processed substrate comprising the steps of (1) providing the post-CMP processed substrate comprising a semiconductor material; and (2) contacting the post-CMP processed substrate with a process solution **consisting essentially of** an aqueous solvent and a non-aqueous

solvent and about 10 ppm to about 500,000 ppm of at least one surfactant having the specified formulas (I) and (II) (*see, e.g.*, claim 34). Significantly, the process solution of Applicants' claimed invention consists of **three** components – an aqueous solvent (*i.e.*, water), a non-aqueous solvent, and a surfactant component selected from formulas (I) and (II) (other than the possibility of other additives such as, for example, stabilizers, colorants, wetting agents, antifoamers, etc., which do not materially affect the basic and novel characteristics of the invention).

The Hsu publication, in contrast, discloses cleaning compositions for cleaning photoresist and plasma ash residues from microelectronic substrates. In the first instance, the cleaning compositions of the Hsu publication are for use as a cleaner for photoresist and plasma ash residues from microelectronic substrates. Significantly, this is a difference process from that defined by Applicants' claim 34, for example, which recites a method for treating a post-CMP processed substrate. Indeed, photoresist and plasma ash residues are quite different substances from the post-CMP residues removed by the process solution of the present invention.

Moreover, the cleaning compositions of the Hsu publication include a non-HF producing fluoride salt as an essential component (*see, e.g.*, the Hsu publication at page 2, paragraph [0012]; and claim 1). Since the compositions of the Hsu publication disclose a non-HF producing fluoride salt as an essential component, the Hsu publication does not teach or suggest Applicants' claimed invention, *i.e.*, a process solution that consists of **three** components – an aqueous solvent (*i.e.*, water), a non-aqueous solvent, and a surfactant component selected from formulas (I) and (II) (other than the possibility of other additives such as, for example, stabilizers, colorants, wetting agents, antifoamers, etc., which do not materially affect the basic and novel characteristics of the invention). Thus, for at least these

reasons, the Hsu publication does not teach each and every element of Applicants' claimed invention.

Claims 1 to 5, 7 to 9, and 11 to 37 have been rejected as allegedly being anticipated under 35 USC § 102(e) by U.S. published patent application No. 2004/0029395 ("the Zhang 395 publication"); U.S. published patent application No. 2004/0053172 ("the Zhang 172 publication"); U.S. published patent application No. 2004/0204328 ("the Zhang 328 publication"); and U.S. published patent application No. 2004/0053800 ("the Zhang 800 publication") (collectively, "the cited Zhang publications"). Without commenting on the merits of such rejections, Applicants submit respectfully that the cited Zhang publications do not qualify as prior art under 35 U.S.C. § 102(e) because the present patent application and the cited Zhang publications are not "by another," as that term is used in § 102(e).

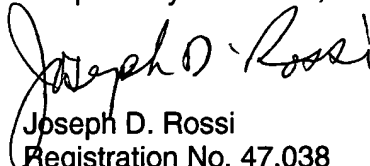
Enclosed herewith is a Declaration under 37 C.F.R. § 1.132 that establishes that any invention allegedly disclosed but not claimed in the cited Zhang publications was derived from the inventors of the present application. Accordingly, Applicants respectfully request the removal of the prior art rejections of these claims because the present application and the cited Zhang publications are not "by another" within the meaning of 35 U.S.C. § 102(e).

Conclusion

Applicants believe that the foregoing constitutes a complete and full response to the Action of record. Applicants respectfully submit that this application is now in condition for allowance. Accordingly, an indication of allowability and an early Notice of Allowance are respectfully requested.

The Commissioner is hereby authorized to charge the fee required and any additional fees that may be needed to Deposit Account No. 01-0493 in the name of Air Products and Chemicals, Inc.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Joseph D. Rossi". The signature is fluid and cursive, with the first name "Joseph" and last name "Rossi" clearly distinguishable.

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attachments: Declaration under 37 C.F.R. § 1.132